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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,371	11/18/2003	Alan L. Browne	GP-303749	4402

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EXAMINER

PAPE, JOSEPH

ART UNIT	PAPER NUMBER
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3612

DATE MAILED: 03/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/716,371

Applicant(s)

BROWNE ET AL.

Examiner

Joseph D. Pape

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 7-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 11-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/11/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Figure 2 in the reply filed on 12/15/04 is acknowledged.
2. Claims 7-10 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12/15/04.

Specification

3. The abstract of the disclosure is objected to because it contains legal phraseology such as "means" which should be avoided. Correction is required. See MPEP § 608.01(b).
4. The disclosure is objected to because of the following informalities: In paragraph 18, the second to last line, "mean" should be changed to —means—for clarity.

Appropriate correction is required.

Drawings

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Reference numeral "38" used in paragraph 21 does not appear in the drawings. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 2, 4, 5, 11 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Julien.

Julien discloses the claimed invention including an energy absorption device having a plurality of deformable members 162 fixed between a vehicle bumper 164 and a vehicle frame 166 which inherently includes a vehicle body rail. The deformable members are formed of shape memory material. See Figures 19-20 and column 7, lines 65-68 to column 8, lines 1-27. Note that Nitinol is another name for a nickel titanium alloy.

Re claim 11, in column 8, lines 19-20, it is disclosed that the members 162 can be restored to their memory shape by merely heating them.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Julien.

Julien discloses the claimed invention including that the members 162 can be restored to their memory shape by merely heating them. Thus, a "means for heating" the members is inherent to the step of heating disclosed by Julien.

The examiner takes Official Notice that electrical resistance heating is one of the well known heating means to heat a shape memory material for restoration thereof after deformation which can be used to heat the members of Julien since the members of Julien are "electrically conductive and restorable".

11. Claims 3, 6, and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isaacson in view of Julien and Kim.

Isaacson discloses an impact energy absorption device having a cylindrical crash box 10, with a ram 32 and a deformation member comprising spring 48 therein.

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Isaacson discloses the claimed invention except for the spring being made out of a shape memory material and the ends of the spring being attached to the crash box and to the ram.

Julien discloses an impact energy absorption device having a plurality of deformable members 162 fixed between a vehicle bumper 164 and a vehicle frame 166. The deformable members are formed of shape memory material. See Figures 19-20 and column 7, lines 65-68 to column 8, lines 1-27. Note that Nitinol is another name for a nickel titanium alloy.

Julien discloses the claimed invention including that the members 162 can be restored to their memory shape by merely heating them. Thus, a “means for heating” the members is inherent to the step of heating disclosed by Julien.

Kim discloses an energy impact energy absorption device having a crash box 94 and a spring which is secured at both ends to structure within the crash box. See column 4, lines 30-33.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the spring of Isaacson out of a shape memory material as taught by Julien to provide for restoration of the spring after deformation by heating the spring for enhanced function thereof. It would also have been obvious to one skilled in the art at the time the invention was made to secure the ends of the spring of Isaacson, as modified, to the ram and the crash box as taught by Kim for better shock absorption along the axis of the spring.

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12. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Julien in view of Ikematu et al.

Julien discloses the claimed invention except for the use of a shape memory polymer instead of a shape memory alloy.

Ikematu et al. disclose the use of shape memory polymers for automobile bumpers. See the abstract.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a shape memory polymer for the members of Julien as taught by Ikematu et al. as an alternate, lighter weight type of shape memory material.

13. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied above to claim 14 and further in view of Ikematu et al.

Isaacson, as twice modified, discloses the claimed invention except for the use of a shape memory polymer instead of a shape memory alloy.

Ikematu et al. disclose the use of shape memory polymers for automobile bumpers. See the abstract.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a shape memory polymer for the spring of Isaacson, as twice modified, as taught by Ikematu et al. as an alternate, lighter weight type of shape memory material.


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Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Pape whose telephone number is (703) 308-3426. The examiner can normally be reached on Tues.-Fri. (6:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Dayoan can be reached on (703) 308-3102. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Joseph D. Pape
Primary Examiner
Art Unit 3612
3/15/05

Jdp

March 15, 2005